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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/540,229

10/05/2005

Arno H Benneker

4662-36

1616

23117 7590 10/28/2008
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EXAMINER

MANOHARAN, VIRGINIA

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

10/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,229	Applicant(s) BENNEKER ET AL.	
	Examiner Virginia Manoharan	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/13/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors, e.g., typographical, grammar, idiomatic, syntax and etc. Applicants' cooperations are requested in correcting any errors of which applicants may become aware in the specification.

The abstract of the disclosure is objected to because of the inclusion of legal phraseology often used in patent claims such as "comprising " in lines 2-3. Correction is required. See MPEP § 608.01(b).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a). There are insufficient antecedent bases for the following limitations in the claims: 1). "preparing of the mixture" in claim 13 (not initially recited in the base claim, i.e., the preparing step; and 2). The "cyclohexane" in claim 15, (not previously in claim 1).

b).The dependency to claim 1 is mentioned twiced in claim 15 providing for confusion.

c). It is unclear whether the recited "a distillation column" in claim 16 is the same or different from the initially recited "a distillation column" in claim 1.

d). The claimed "to anyone of claim 1" in claim 3 is ambiguous.

e). It is unclear where the water originates? Note claim 1, lines 4.

Claims 1-16 are objected to because of the following reasons: 1). "claim 6" should be-- claim 8--; 2). "aid" in claim 3, line 2 should be --said. Also "the said" in claim 3 is redundant; 3). A comma is missing from the compound "cyclohexane cyclohexyl hydroperoxide" recited in claim 13; and 4).The claimed " one or more " should be – at least one—to avoid the alternative or.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Disclosure of Admitted prior Art as illustrated by GB-A-2028329 in view of Mori et al (5,667,644).

Applicants admit that a process for reducing the aldehyde concentration in a mixture comprising cyclohexanone and one or more aldehydes is known. The process admitted to be known differs from the claimed invention in that claim 1, for example, recites "...distilling said mixture in a distillation column in the presence of an alkaline compound, wherein in the bottom of the distillation column less than 100 weight ppm of water is present..". In GB ' 329 as described by applicants, "aldehydes like caproaldehyde

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(hexanal) can be removed by subjecting a mixture comprising cyclohexanone and aldehydes to an aldol condensation reaction carried out in a separate aldol condensation vessel in the presence of an aqueous sodium hydroxide solution. The so-obtained mixture is subsequently washed with water to remove sodium hydroxide. In order to improve phase separation, cyclohexane is fed to the washing device. The washed organic mixture is subsequently distilled in a distillation column where low boiling components are distilled off..” Mori is applied to teach a process wherein an alkali catalyst is present on the liquid phase in the distillation column and the feed aldehyde and water are distilled from the above of the inlet of the feed to the distillation column, thereby presupposing that substantially no water is present at the bottom of the distillation column. See col. 6, lines 45-61. To combine the references would have been obvious to one of ordinary skill in the art inasmuch as the references are both directed to the same processing environment, i.e., to a distillation process of treating aldehydes from a mixture containing the same.

Claims 13-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a). Swearinger et al teaches that caustic provides a substantially pure acetophenone distillate.

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- b). Pinkos et al discloses a process for the separation by distillation of a mixture of butanediol and at least one butyraldehyde.
- c). Barnicki et al discloses a process for the purification of cyclobutanone from a mixture containing the same e.g., by distillation.
- d). Chan et al discloses a process wherein there's less than 0.5 % water at the bottom of a distillation column.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to V. Manoharan whose telephone number is (571) 272-1450.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Virginia Manoharan/
Primary Examiner, Art Unit 1797

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